ELECTROCHEMICAL PROPERTIES CMC/K-CARRAGEENAN DERIVATIVE HYBRID SOLID BIO-POLYMER ELECTROLYTES SYSTEM

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Abstract:
In the present work, hybrid solid bio-polymer electrolytes (HSBEs) system were successfully prepared via solution casting approached comprises of CMC blend with kappa carrageenan. The HSBEs system was characterized for the conduction properties using EIS technique. The ionic conductivity is found to achieve the optimum value at ~10-7 S/cm for hybrid system with the ratio of CMC: KC is 80:20 and later was further increased to ~10-4 S/cm when NH4NO3 was added with 30 wt. %. The enhancement of ionic conductivity for HSBEs system was due to the increase segmental mobility when NH4NO3 was added. The fabricated cell as electrical double layer capacitor (EDLC) for the highest conducting sample exposed promising characteristics as capacitor with good stability in electrochemical properties.

Keywords: Hybrid polymer; Ionic conductivity; Charge discharge; Specific capacitance

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